

Fig. 1**Compound 1 – Physicochemical Properties**

Appearance	white powder
Molecular formula	$C_{25}H_{28}O_6$
ESI-MS (m/z)	
Positive:	425.3 (M+H) ⁺
Negative:	423.5 (M-H) ⁻
UV λ_{max}^{MeOH} nm (ϵ)	288.5 (19,674)
IR (KBr) cm^{-1}	3420, 2960, 2920, 1680, 1600, 1160
$[\alpha]_D^{24}$ (c 0.2, MeOH)	-5.8°
$[\alpha]_D^{25}$ (c 0.2, CHCl ₃)	+20.0°
MP	80~83°C
CD (MeOH) θ /deg	8470 (330), -46997 (290), 12833 (255)

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Fig. 2

NMR Data (Compound 1 in Acetone- d_6)

Position	^{13}C	^1H
2	77.21 CH	5.62 (1H, dd), $J=2.9, 11.8$ Hz
3	43.26 CH ₂	2.66 (1H, dd), $J=2.9, 17.2$ Hz
		3.17 (1H, dd), $J=11.8, 17.2$ Hz
4	197.59 C	
5	165.29 C	12.19 (-OH, s)
6	95.83 CH	5.96 (1H, s)
7	167.27 C	
8	96.79 CH	5.96 (1H, s)
9	164.65 C	
10	103.12 C	
1'	129.77 C	
2'	127.71 C	
3'	144.08 C	
4'	145.56 C	
5'	113.49 CH	6.82 (1H, d), $J=8.3$ Hz
6'	118.55 CH	6.96 (1H, d), $J=8.3$ Hz
1''	25.15 CH ₂	3.55 (2H, d), $J=6.3$ Hz
2''	124.15 CH	5.18 (1H, t), $J=6.3$ Hz
3''	135.33 C	
4''	16.34 CH ₃	1.68 (3H, s)
5''	40.37 CH ₂	1.97 (2H, t), $J=6.2$ Hz
6''	27.34 CH ₂	2.05 (2H, m)
7''	125.02 CH	5.06 (1H, dt), $J=1.9, 6.2$ Hz
8''	131.74 C	
9''	25.75 CH ₃	1.60 (3H, s)
10''	17.68 CH ₃	1.55 (3H, s)

Fig. 3**Compound 2 – Physicochemical Properties**

Appearance	yellow powder
Molecular formula	$C_{25}H_{28}O_6$
ESI-MS (m/z)	
Positive:	425.0 (M+H) ⁺
Negative:	423.3 (M-H) ⁻
HRFAB-MS (m/z)	
calcd.:	425.1965(M+H) ⁺
found:	425.1968(M+H) ⁺
UV $\lambda_{\text{max}}^{\text{MeOH}}$ nm (ϵ)	288.0 (17,935)
IR (KBr) cm^{-1}	3360, 2960, 2920, 1680, 1600
$[\alpha]_D^{25}$ (c 0.2, MeOH)	-17.8°
MP	123~126°C
CD (MeOH) θ /deg	11444 (332), -30028 (292), 7139 (254)

Fig. 4

NMR Data (Compound 2 in Acetone- d_6)

Position	^{13}C	^1H
2	80.13 CH	5.35 (1H, dd), $J=2.9, 12.2$ Hz
3	43.54 CH_2	2.74 (1H, dd), $J=2.9, 17.1$ Hz
		3.12 (1H, dd), $J=12.2, 17.1$ Hz
4	197.19 C	
5	165.24 C	12.17 (-OH, s)
6	95.81 CH	5.95 (1H, s)
7	167.28 C	
8	96.74 CH	5.95 (1H, s)
9	164.31 C	
10	103.22 C	
1'	130.58 C	
2'	112.07 CH	6.91 (1H, d), $J=2.2$ Hz
3'	145.26 C	
4'	144.30 C	
5'	129.02 C	
6'	119.97 CH	6.81 (1H, d), $J=2.2$ Hz
1''	28.83 CH_2	3.38 (2H, d), $J=7.3$ Hz
2''	123.36 CH	5.38 (1H, m)
3''	136.39 C	
4''	16.21 CH_3	1.73 (3H, s)
5''	40.45 CH_2	2.06 (2H, t), $J=7.5$ Hz
6''	27.37 CH_2	2.12 (2H, td), $J=6.8, 7.5$ Hz
7''	125.07 CH	5.12 (1H, tq), $J=1.5, 6.8$ Hz
8''	131.70 C	
9''	25.80 CH_3	1.63 (3H, s)
10''	17.71 CH_3	1.57 (3H, s)

Fig. 5**Compound 3 – Physicochemical Properties**

Appearance	yellow powder
Molecular formula	$C_{25}H_{28}O_6$
ESI-MS (m/z)	
Positive:	425.1 (M+H) ⁺
Negative:	423.2 (M-H) ⁻
UV $\lambda_{\text{max}}^{\text{MeOH}}$ nm (ϵ)	291.5 (16,833)
IR (KBr) cm^{-1}	3380, 2960, 2920, 1680, 1600, 1450
$[\alpha]_D^{23}$ (c 0.77, MeOH)	-3.94°
$[\alpha]_D^{25}$ (c 0.2, CHCl ₃)	-6.5°
MP	172~175°C
CD (MeOH) θ /deg	9773 (335), -26940 (293), 3399 (255)

Fig. 6

NMR Data (Compound 3 in Acetone-d₆)

Position	¹³ C	¹ H
2	79.85 CH	5.35 (1H, dd), J=3.0, 12.7 Hz
3	43.64 CH ₂	2.71 (1H, dd), J=3.0, 17.1 Hz
		3.12 (1H, dd), J=12.7, 17.1 Hz
4	197.26 C	
5	162.24 C	12.46 (-OH, s)
6	108.99 C	
7	164.76 C	
8	95.27 CH	6.03 (1H, s)
9	161.91 C	
10	103.09 C	
1'	131.69 C	
2'	114.67 CH	7.03 (1H, s)
3'	145.95 C	
4'	146.28 C	
5'	115.97 CH	6.86 (1H, s)
6'	119.18 CH	6.86 (1H, s)
1''	21.53 CH ₂	3.26 (2H, d), J=7.3 Hz
2''	123.44 CH	5.26 (1H, td), J=1.0, 7.3 Hz
3''	134.96 C	
4''	16.18 CH ₃	1.76 (3H, s)
5''	40.46 CH ₂	1.95 (2H, t), J=7.5 Hz
6''	27.38 CH ₂	2.05 (2H, m)
7''	125.12 CH	5.08 (1H, tt), J=1.0, 5.4 Hz
8''	131.54 C	
9''	25.77 CH ₃	1.62 (3H, s)
10''	17.66 CH ₃	1.56 (3H, s)

Fig. 7**Compound 4 – Physicochemical Properties**

Appearance	light brown gum
Molecular formula	$C_{30}H_{36}O_6$
FAB-MS (m/z)	
Positive:	493.3 (M+H) ⁺
UV λ_{max}^{MeOH} nm (ϵ)	292.0 (20,418)
IR (KBr) cm^{-1}	3400, 2960, 2920, 1640, 1600
$[\alpha]_D^{24}$ (c 0.2, MeOH)	+1.8°
$[\alpha]_D^{25}$ (c 0.2, CHCl ₃)	+26.5°
CD (MeOH) θ /deg	8810 (335), -30708 (293), 10510 (257)

Fig. 8

NMR Data (Compound 4 in Acetone- d_6)

Position	^{13}C	^1H
2	77.12 CH	5.59 (1H, dd), $J=2.7, 13.5$ Hz
3	43.49 CH_2	2.65 (1H, dd), $J=2.7, 17.2$ Hz
		3.14 (1H, dd), $J=13.5, 17.2$ Hz
4	197.65 C	
5	162.27 C	12.47 (-OH, s)
6	108.96 C	
7	164.74 C	
8	95.29 CH	6.04 (1H, s)
9	162.27 C	
10	103.01 C	
1'	129.96 C	
2'	127.59 C	
3'	144.04 C	
4'	145.49 C	
5'	113.50 CH	6.82 (1H, d), $J=8.3$ Hz
6'	118.51 CH	6.96 (1H, d), $J=8.3$ Hz
1''	25.13 CH_2	3.54 (2H, d), $J=6.5$ Hz
2''	124.15 CH	5.18 (1H, t), $J=6.5$ Hz
3''	135.34 C	
4''	16.37 CH_3	1.64 (3H, s)
5''	40.36 CH_2	1.97 (2H, t), $J=7.0$ Hz
6''	27.35 CH_2	2.04 (2H, m)
7''	125.02 CH	5.06 (1H, qt), $J=1.2, 7.0$ Hz
8''	131.72 C	
9''	25.84 CH_3	1.69 (3H, s)
10''	17.67 CH_3	1.55 (3H, s)
1'''	21.62 CH_2	3.26 (2H, d), $J=6.6$ Hz
2'''	123.61 CH	5.24 (1H, qt), $J=1.5, 6.6$ Hz
3'''	131.17 C	
4'''	25.75 CH_3	1.61 (3H, s)
5'''	17.81 CH_3	1.76 (3H, s)

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